

## Supplementary Information

Supplementary Table 1: Oligonucleotide primers used in this study

Purpose	Primer	Sequence
Cloning of 301bp fragment of <i>nanA</i> in pORI19	NanAF	TAGCATCTGCAGGAGATCGAGGCCACTTC
	NanAR	TGGCATTCTAGACACGTTGGCGAGTCCCGC
Cloning of 370bp fragment of <i>nanK</i> in pORI19	NanKF	GCTATTAAGCTTGAGTGTCTCGATGGCGTG
	NanKR	GATCTATCTAGACGTCCGGGTCATGAGGTTG
Cloning of 504bp fragment of <i>nanB</i> in pORI19	NanBF	TACGCTGCATGCGTGGAACGTGAATGGATGAC
	NanBR	GTATGCTCTAGAGGGCGGAGGACTTCATGGAC
Cloning of 355bp fragment of <i>nanC</i> in pORI19	NanCF	TAGCATAAGCTTCTCCTGATGTCGTTCTCCC
	NanCR	GACTAGTCTAGAGGTAGCGATGGCGATGATG
Cloning of 402bp fragment of <i>nagA2</i> in pORI19	NagA2F	TAGCTACTGCAGGCATTGATGTGGCTCGT
	NagA2R	GCATCGTCTAGACCTTGGCGGTCTCGTAGTC
Amplification of <i>tetW</i>	TetWF	TCAGCTGTCGACATGCTCATGTACGTAAG
	TetWR	GCGACGGTCGACCATTACCTCTGAAACATA
Confirmation of site-specific homologous recombination	NanAconfirm	ACCGTCATGGAGATTGTCGA
	NanKconfirm	GTGACCGACCTGCCAGTG
	NanBconfirm	GCGGACCTCAAGAAGATGCC
	NanCconfirm	CACAAGTCATTGCCATCAC
Cloning of 1015bp fragment containing <i>nanA</i> into pNZ44	NanA <sup>a</sup> pNZ44F	CCGTAATGCAGTGGTGGATG
	NanA <sup>a</sup> pNZ44F	TAGCATTCTAGAGATGTCAGGCCTCGGTGGA
Cloning of <i>p44-nanA</i> in pBC1.2	NanApNZ44R	TAGCATTCTAGACAACGAAGGGAACCGGGAC
	P44FORWARD	TCAGCAGGATCCGAGATAATGCCGACTGTAC
Cloning of <i>nanA</i> in pNZ8150	NanAFOR	TAGCATGATATCATGACAACACAATTCCCGC
	NanAREV	CATTAGTCTAGATCAATGGTGTGGTGTGGTGTGGTGGAGGCGGAGACTTC
Cloning of <i>nanK</i> in pNZ8150	NanKFOR	TAGCGTGTATCATGCACCATCACCATCACCATCACCATCCCACCTACCGCTTCGACATC
Cloning of <i>nanE</i> in pNZ8150	NanKREV	TAACGTTCTAGACTTGTCTATCGCGCGTGTCCGGC
	NanEFOR	TAGCATGATATCATGCACCATCACCATCACCATCACCATCACCATCACAGGAATCGAGAAGATC
Cloning of <i>nagA2</i> in pNZ8150	NanEREV	CGTTCATCTAGACTCACAGCTTCGCTCG
	NagA2FOR	TAGCATGATATCATGCACCATCACCATCACCATCACATTCTGATAGGAAGAAATTGTCTC
Cloning of <i>nagB1</i> in pNZ8150	NagA2REV	CGTTCATCTAGAGCCATTGCAGCTATTTC
	NagB1FOR	TAGCATGATATCATGGCAGAAGTCATCATCGTCAAG
	NagB1REV	TGCACGTCTAGATCAATGGTGTGGTGTGGTGTGGTGGATCGTCTGCCAGGCCGG

Restriction sites incorporated into oligonucleotide primer sequences are indicated in italics, 10 x His tag sequences are indicated in bold